QUARTERLY REPORT

May 1st, 2005 to July 31st 2005

Project Title

Montana Department of Transportation (MDT)
Determine Current Rates of Motor Fuel Tax Evasion in the State of Montana

Principal Investigator

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Research Assistants

The work performed under this contract has been performed by the Battelle Memorial Institute with the assistance of our subcontractor, Montana State University.

Introduction

This fourth quarterly report covers the period beginning May 1, 2005 and ending on July 31, 2005. During the last quarter, the Battelle Team completed elements of Task 4 (industry enforcement activities), Task 5 (mapping the motor fuel distribution system), Task 6 (data analysis), Task 7 (compliance/collection recommendations), Task 8 (evasion estimation) and Task 9 (public awareness programs) as described below in the Work Progress section of this report. The next section provides an overview of the project objective. The report also provides an overview of the progress completed during the last quarter and a projection of work to be performed in the next quarter. Finally, the report compares anticipated budget/work completed to the project schedule.

Project Objective

The primary objective of the research project is to determine the extent and underlying reasons for motor fuel tax evasion in Montana. The project will also generate recommendations concerning where best to focus enforcement efforts and make changes to tax code to close the gap between total tax liability and actual tax collections in Montana. The specific objectives of the project are to:

- Critically assess administrative and enforcement characteristics of border state practices, identify how these characteristics have traditionally correlated with certain types of evasion and compare these programs to Montana State practices.
- Identify evasion techniques and note administrative, enforcement and legislative strategies used to curtail motor fuel tax evasion.
- Identify and examine data that could be used to assist Montana in measuring motor fuel tax evasion.
- Develop and demonstrate a methodology for estimating state motor fuel tax evasion.
- Develop recommendations for making changes to the current administrative, enforcement and legislative framework established for the motor fuel tax program in Montana and perform benefit-cost analysis to rank these proposed changes based on the computed benefit-cost ratio for each proposed programmatic change.

Work Progress

Work completed during the past quarter focused primarily on activities outlined in Tasks 4 through 9. The Battelle Team completed the Task 5 interviews of industry representatives and produced a report documenting relevant findings. Battelle mapped the region's motor fuel system as part of Task 5. Task 6 activities centered on the collection and analysis of data required to conduct evasion analysis. The research team prepared preliminary recommendations for improving collections and developed a proposed methodology as part of Tasks 7 and 8, respectively. Finally, Battelle compiled relevant interview information and completed follow-on data collection activities relating to public awareness programs.

A summary of each activity performed, along with percentage of work completed by task during the past quarter, follows:

- Task 1 – Kickoff Meeting, Literature Review, Enforcement/Compliance Activities

No work was performed on Task 1 during this past quarter.

Task 1 represents 16.8% of both the total work effort and the budget. Task 1 is 100% complete.

- Task 2 – Impact of Enforcement Programs

No work was performed on Task 2 during the past quarter.

Task 2 represents 10.9% of both the total work effort and budget. Task 2 is 100% complete.

- Task 3 – Analysis of Tax Codes, Legislation

No work was performed on Task 3 during the past quarter.

Task 3 represents 8.9% of both the total work effort and budget. Task 3 is 100% complete.

- Task 4 – Interview Representatives of Entities Involved with Fuel Distribution
    - Conducted interviews with industry representatives
    - Prepared a report that documents the outcome of the interviews and covers the main topics covered by the interviews:
        - Process for compliance and reporting procedures
        - Shortcomings of data reported and compliance costs
        - Fuel tax evasion and improving compliance
        - Electronic reporting
        - Compliance issues with Native American reservations
        - Improving compliance through public outreach

Task 4 represents 5.6% of both the total work effort and budget. Task 4 is 100% complete.

- Task 5 – Examination of Fuel Distribution and Compliance Programs
    - Data collection activities
    - Mapped the motor fuel distribution system (roadway network, pipelines, border crossings, rail network, terminals, refineries) and prepared GIS maps that also identify programmatic elements (e.g., enforcement levels, IFTA audit levels, tax rates)
    - Prepared a report examining the content of the GIS maps

Task 5 represents 10.9% of both the total work effort and budget. Task 5 is 100% complete.

Task 6 – Data Analysis
    - Prepared a report that documents the data needed to support the modeling effort

- Examined data in order to determine the availability and limitations inherent in the data required to perform the evasion analysis
- Defined additional data needs from sources other than MDT
- Collected data to support evasion modeling

Task 6 represents 7.6% of both the total work effort and budget. Task 6 is 75% complete.

Task 7 – Compliance/Collection Recommendations

- Compiled a preliminary list of compliance/collection and tax code recommendations based on the outcomes of the Tasks 2-5 analyses

Task 7 represents 9.6% of both the total work effort and budget. Task 7 is 75% complete.

Task 8 – Evasion Analysis

- Finalized a report documenting an approach for estimating evasion. The report tied evasion estimation methods to various techniques used to evade motor fuel excise taxes, demonstrated how these methods could be employed and identified data elements required to deploy the evasion estimation methods.
- Revised the report and the methodology based on input from the client

Task 8 represents 7.4% of both the total work effort and budget. Task 8 is 40% complete.

Task 9 – Public Awareness Programs

- Compiled relevant interview information and completed follow-on data collection activities relating to several education topics (e.g., education of taxpayers, audit training, media campaigns).

Task 9 represents 3.7% of both the total work effort and budget. Task 9 is 50% complete.

No work has been performed on Task 10.

Issues

The most significant issues faced by the research team relate to data availability and the time required to collect required data. More specifically, the majority of the data required to perform the evasion analysis is maintained by MDT. MDT has indicated that it may require two months time and additional resources to develop the data required to perform the analysis. The initial response from MDT demonstrates that it possesses an extensive set of data that could be used to support the evasion analysis. Therefore, there are no data limitations that appear insurmountable. The schedule, however, must be adjusted to account for the time required for MDT to provide the data.

Major Accomplishments or Discoveries

The research team concluded its examination of the region's motor fuel distribution and tax systems and found that the opportunities for motor fuel tax evasion within a state are affected by a number of factors including regional geography, fuel production and fuel distribution. Moreover, relevant tax codes, fuel tax administrative procedures and fuel tax enforcement efforts internal to a jurisdiction and of those in surrounding jurisdictions could potentially impact collections in a significant manner. Analysis of these factors is important in order to identify the potential compliance issues, and properly design and employ a methodology for estimating fuel tax evasion within a jurisdiction.

Several approaches have been utilized to analyze these factors for Montana. Visual representations and GIS maps were created using data characterizing regional fuel production, fuel distribution, geographic relationships and motor fuel tax program features. Montana tax codes relating to motor fuel taxation were also examined and compared with other jurisdictions. Further, characteristics of fuel tax administrative and enforcement procedures in Montana were identified and evaluated in relation to those identified in neighboring states.

Analysis of the region's tax rates has produced a list ranking the incentives to bootleg fuel into Montana from neighboring jurisdictions by type of fuel. This list identifies where the potential compliance problems exist due to fuel that is either exempt or has been taxed in one jurisdiction but is subsequently imported into Montana without being reported. Bootlegging kerosene from British Columbia or Saskatchewan ranks among the highest potential evasion activities because neither jurisdiction taxes nor dyes this fuel. Also ranked high among potential and lucrative evasion activities is the bootlegging of previously taxed fuel from Wyoming into Montana. This evasion technique is incentivized by the significant differential between the two states' tax rates. This ranking has also pointed out that there is little incentive to illegally import previously taxed diesel and gasoline from Canadian provinces.

Another finding of interest emerged out of using GIS mapping technology to compare regional characteristics related to fuel taxation. One map overlaid fuel tax rates with fuel consumption per capita in Montana and its surrounding jurisdictions. One interesting finding from this exercise is that Wyoming consumes significantly more fuel per capita compared to other jurisdictions in the region while also imposing the lowest tax rates in the region, and that per capita diesel consumption in Wyoming is particularly high relative to other states in the region. This fact could be attributable to taxed Wyoming diesel being illegally imported into Montana and other states in the region.

The research team developed an approach for estimating current levels of error, omissions and evasion (EOE) with respect to motor fuel taxes in the State of Montana by applying multiple approaches relevant to specified motor fuel tax evasion techniques. For this study, an **evasion technique** is defined as an approach used to defraud jurisdictions of motor fuel taxes. For example, bootlegging would be considered an evasion technique. A methodology comprised of multiple modeling approaches will be adopted in this project to estimate an overall tax evasion rate in the State of Montana, because no one estimation method, in and of itself, has been proven to accurately

estimate evasion resulting from all evasion techniques. For this study, an **estimation method** is defined as a method used to estimate levels of evasion, omissions and errors (EOE). Thus, estimation methods are used to estimate EOE levels resulting from evasion techniques. For example, analysis of inspections data (an estimation method) may be used to estimate EOE resulting from abuse of tax-exempt dyed fuel (an evasion technique).

The methodology proposed would allow the sum of the individual evasion techniques to equal the amount of total evasion. For example:

$$E_m = ET_1 + ET_2 + ET_3 + \ldots + ET_n$$

Where:

E_m	= Estimated evasion in the State of Montana
$ET_{1\ldots}ET_n$	= Estimated evasion for technique 1 through n
1…n	= Evasion technique (e.g., dyed fuel evasion, abuse of IFTA return process, false refunds or credits, bootlegging across state lines, false claim of export, illegal importation, … etc.)

The research team prepared a report explaining the suggested estimation methods and the data required from the Montana DOT to perform the analysis. The methodological approaches for estimating fuel tax evasion for the specific evasion techniques proposed for this analysis are: 1) the comparison of estimated consumption with taxed gallons, 2) audit and inspections analysis, 3) motor fuel tracking and 4) the supply and use approach. As part of the audit and inspections analysis, statistical sampling and tobit analysis are proposed.

The research team assigned estimation methods to each of the evasion techniques identified for analysis as follows:

- Evasion Using Dyed Fuel Schemes (Tobit Analysis)
- False Refunds or Credit Schemes (Comparison of Estimated Fuel Consumption with Taxed Gallons and Supply and Use Approach)
- Abuse of IFTA Return Process (Tobit Analysis)
- Bootlegging Across Montana State Border Lines (Statistical Sampling of Audit/Inspections Data)
- False Claim of Exports (Motor Fuel Tracking)
- Illegal Importation from Foreign Sources (Motor Fuel Tracking)
- Failure to Remit (Statistical Sampling of Audit/Inspections Data)

The research team also outlined data needs required to perform each proposed evasion analysis.

Work Projection

During the next quarter ending October 31, 2005, we plan to perform the following activities:

- Submit a draft of the final report sections covering Tasks 1-6.
- Complete the analysis of public awareness programs.
- Compile the data required to perform the evasion analysis.
- Finalize the evasion estimation model.

Schedule

The project is slightly behind schedule and under budget when comparing the work performed to date with the budget expended on each task. As shown in Figure 1, we targeted Tasks 1 through 7 for 100% completion, Tasks 8 and 9 for 50% completion, and Task 10 for 25% completion at the end of this quarter. Thus far, Tasks 1 through 5 are 100% complete, and Tasks 6-8 are slightly behind schedule at 75%, 75% and 40% completed, respectively. Task 9 is on schedule at 50% complete.

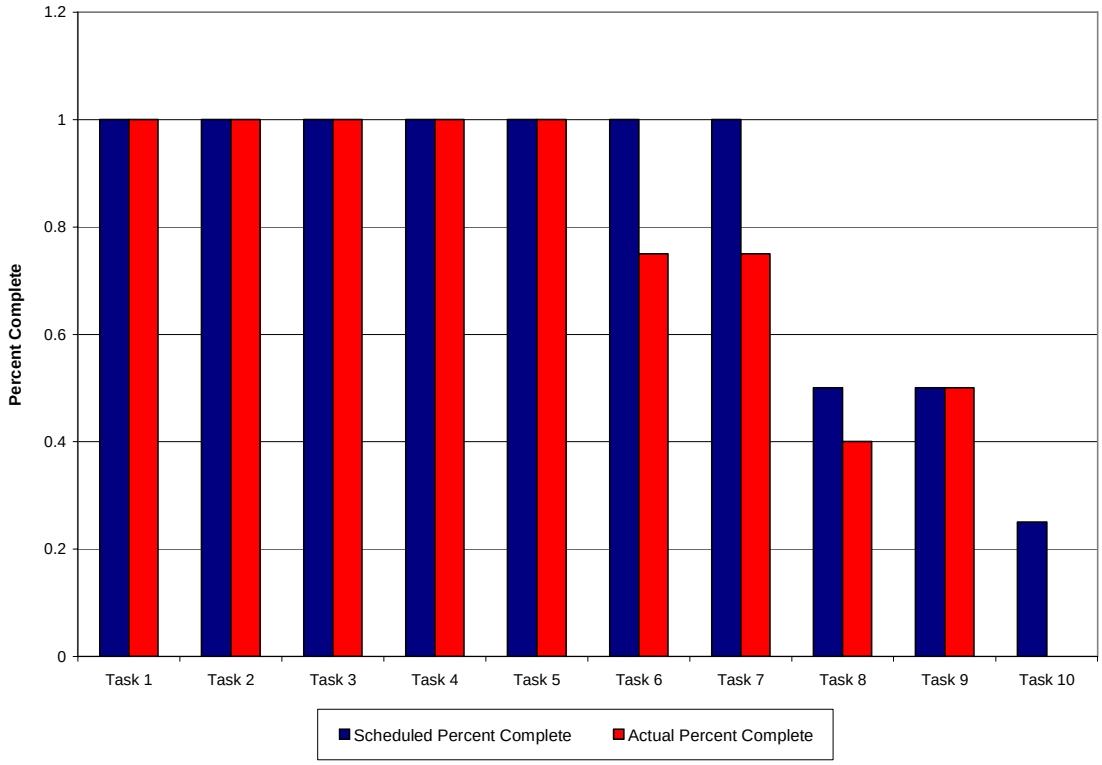

Figure 1 – Work Progress through July 31, 2005.

Budget

The project budget identified roughly $41,691 for the fourth quarter of the research plan and $74,024 was expended. The total budget through the first three quarters of the research plan totals $173,248. To date, the research team has expended roughly $132,814 or 77% of the total amount budgeted (Figure 2).

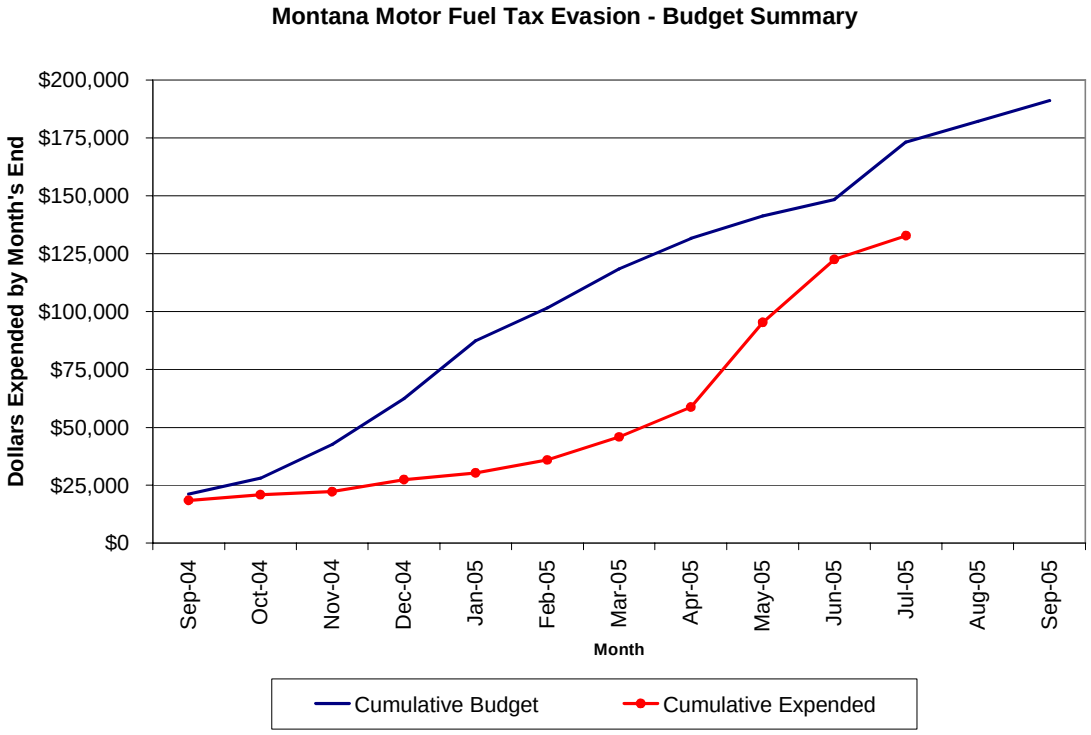

Figure 2 – Projected and Actual Expenditures through July 31, 2005.

Budgeted and Projected Expenditures – State and Federal Fiscal Years (SFY and FFY) 2004 and 2005

Table 1 presents an analysis of the project budget, including the total project budget, total invoiced through July 31 of 2005, the remainder of the project budget, total expenditures through SFY and FFY 2004 and projected expenditures through SFY and FFY 2005. Costs for all tasks will be incurred in the State of Montana's FY 05 (July 1, 2004 – June 30, 2005), with the exception of a portion of those incurred on Tasks 8 and 9, and all of Task 10. Those tasks will carry into the State of Montana's FY 06 (July 1, 2005 – June 30, 2006). As shown, to date $132,814 has been expended of $91,079 budgeted for the entire project, leaving a remaining balance of $58,265. The remaining budget is appropriate given the modeling and data collection efforts left to complete.

Table 1 Budgeted and Projected Expenditures for State and Federal Fiscal Years (SFY and FFY) 2004 and 2005.

Budget Items	Budgeted/Projected	Actual
Total Budget	$191,079	$191,079
Total invoiced through July 31, 2005	$173,248	$132,814
Total project budget remaining as of July 31, 2005	$17,831	$58,265
Total expenditures through SFY 2004	0	0
Total expenditures through FFY 2004	$21,160	$18,501
SFY 2005 expenditures	$148,356	$122,512[1]
FFY 2005 expenditures	$169,919	$114,313[1]

[1]Actual amounts represent those expended within SFY and FFY 2005 through July 31, 2005.